IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION

SPACETIME3D, INC.,

Plaintiff,

v.

APPLE INC.,

Defendant.

Case No. 6:22-cv-00149

JURY TRIAL DEMANDED

SPACETIME3D, INC.'S CLAIM CONSTRUCTION RESPONSE BRIEF

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I. INTRODUCTION

The parties only dispute two issues:

(1) whether the "texturing" term from U.S. Patent No. 8,881,048 (the "'048 Patent") requires that texturing can only be applied to 3-dimensional objects where ample evidence confirms that texturing can apply to objects in two-dimensions as well; and

(2) whether the preambles of certain claims of U.S. Patent No. 9,696,868 (the "'868 Patent") are limiting where they provide no antecedent bases for the rest of the claim and where nothing in them breathes life into the claims.

In support of its position, Apple relies heavily on the constructions adopted by Judge Payne in a previous case involving these patents. But this Court is not bound by Judge Payne's constructions. *Tex. Instruments, Inc. v. Linear Techs. Corp.*, 182 F. Supp. 2d 580, 589 (E.D. Tex. 2002). The Court should not defer to Judge Payne's constructions also because SpaceTime has provided new extrinsic evidence for the texturing term and new arguments for both terms that explain why its proposed constructions are correct.

II. ARGUMENT

A. "Texturing" does not require a 3D object.

The term "texturing" appears in Claims 1 and 8 of the '048 Patent and is a term that jurors will readily understand in the context of the claim language:

> [C]apturing first and second images of the at least a portion of the first webpage and the at least a portion of the second webpage, respectively; and ***texturing*** the first image on the first object and the second image on the second object, the first object being displayed in a foreground of the 3D space and the second object being displayed in a background of the 3D space.

Ex. 4 at 37:62-38:3; *see also id.* at 39:19-23. No construction is necessary because the claims make clear what is being done (texturing), specify what is used for texturing (an image), and identify what texturing is being done to (an object) .

Even if the Court concludes that construction is necessary, the crux of the parties' dispute is whether the object onto which the image is drawn or mapped *must be* three-dimensional—as Apple acknowledges. Dkt. 38 at 7. The object need not be exclusively 3D, for three reasons.

First, Apple's construction is at odds with the claim language. The claim language makes clear that texturing is done simply to "an object" being *displayed* in 3D space; the claims do not specify whether the objects are themselves 2D or 3D, for example, by adding such a modifier. *See, e.g.*, Ex. 4 at 37:66-38:3 ("texturing the first image on the first object and the second image on the second object, the first object being displayed in a foreground of the 3D space and the second object being displayed in a background of the 3D space"). By contrast, Apple's construction seeks to re-write the claims as requiring "texturing the first image on the first [3D] object and the second image on the second [3D] object, the first object being displayed in a foreground of the 3D space and the second object being displayed in a background of the 3D space"—but that is not how they are written. Indeed, the patent's intentional use of "2D" and "3D" to modify the term "space" demonstrates that the absence of a modifier for the term "object" was intentional—*i.e.*, if the patent meant "3D object" it would have provided the modifier "3D" as it does for the 2D and 3D space terms.

Apple's proposed construction that texturing must be done onto 3D objects—rather than onto any object being displayed in a 3D space—is contrary to the claim language and internally inconsistent with the idea that 2D objects can be displayed in a 3D space. Indeed, while Apple is careful not to refer to the objects in the 3D space as 2D objects in its briefing, Dkt. 38 at 4-5 (calling them "windows" or "objects"), it is apparent from Figure 10 that the windows, such as item 362, can be 2D objects:

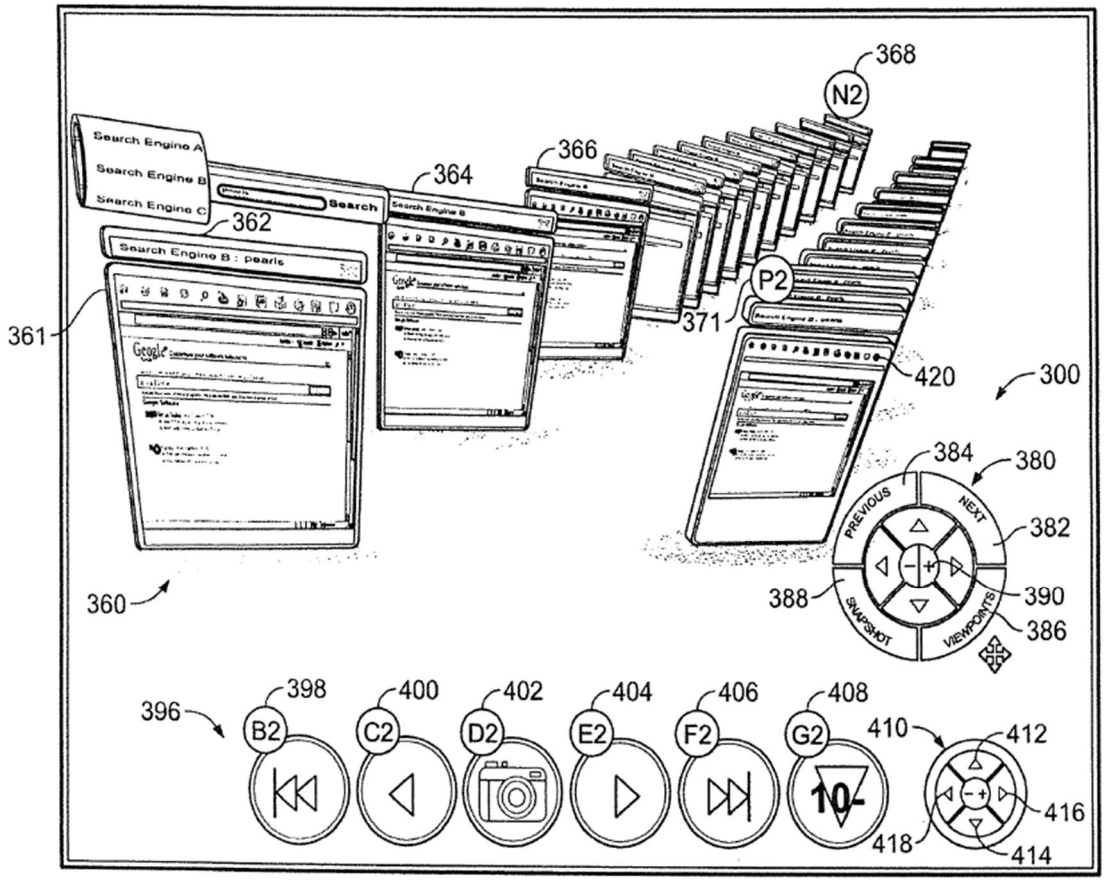


FIG. 10

As Apple concedes at page 4 of its brief, the patent specification makes clear that "the position of depth (z) which is also known as time" is the third dimension of the virtual 3D space. Ex. 4 at 20:18-24. In other words, the patent itself contemplates there being 2D objects in 3D space, and provides illustrated examples of them in the form of floating windows 362, 364, 366 in 3D space 300. This is consistent with Judge Payne's previous constructions and the constructions Apple agreed to here for the 2D and 3D terms. Dkt. 38 at 6 (the term "three-dimensional space" means "a virtual space defined by a three-dimensional coordinate system" and "two-dimensional space" means "a finite graphical area defined by a two-dimensional coordinate system"). Moreover, during the prior claim construction, Samsung argued that a 3D space requires 3D objects. The court disagreed, stating that while "[i]t is true that 'objects' may be displayed in 3D space … the term at issue is 'spaces,' and not the term 'objects.' Indeed, 'objects' is a separately recited element

in the claims." *SpaceTime3D, Inc. v. Samsung Elecs. Co.,* No. 2:19-cv-372-JRG (E.D. Tex. Dec. 7, 2020), Dkt. 104 at 16. That analysis applies here as well. Texturing is a verb, and the parties agree that it means drawing or mapping. It is the claim that provides what gets textured onto what (*e.g.*, the first image on the first object and the second image on the second object). But there is no requirement in the patent that the objects on which the texturing occurs be 3D.

But in light of those constructions, Apple's proposed construction, which limits objects in 3D space as being *only* 3D objects, is inconsistent with the patent specification, which does not limit 3D objects to 3D space but rather specifically illustrates 2D objects as occupying 3D spaces as well, and should therefore be rejected. *See Chamberlain Grp., Inc. v. Lear Corp.*, 516 F.3d 1331, 1339 (Fed. Cir. 2008) (finding district court's claim construction to be erroneous where it "is internally inconsistent and contradictory to the rest of the patent").

Second, Apple's proposed construction would improperly import a limitation from the specification to the claim language. Apple focuses on the supposed similarity between "texturing" (in the claims) and "texture mapping" (in the specification). Dkt. 38 at 8. There are two problems with this argument. For starters, all of Apple's cites to the specification concern examples or embodiments, and it is well established that embodiments do not limit claim language. *See Hill-Romm Servs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1371 (Fed. Cir. 2014) ("While we read claims in view of the specification, of which they are a part, we do not read limitations from the embodiments in the specification into the claims."). More fundamentally, the specification's use of "texture mapping" occurs in the context of "*composite* texture mapping." As SpaceTime's expert, Dr. Scott Schaefer, explains, "composite texture mapping" is a two-part process: texturing and display. Ex. 6 ¶ 19. Texture can be mapped onto 2D objects for display in 3D in computer graphics. *Id.* In other words, the 3D language that Apple points to in the specification comes from

the second part of the composite process—and therefore does nothing to limit the texturing part. Indeed, the claim language itself demonstrates these two separate actions, and only one of them—the display, not the texturing—involves 3D:

- ***texturing*** the first image on the first object and the second image on the second object,
- the first object being ***displayed*** in a foreground of the 3D space and the second object being ***displayed*** in a background of the 3D space

Ex. 4 at Claim 1 (emphasis added). The intrinsic evidence, even if one accepts Apple's conflation of texturing and texture mapping, fails to show that texturing can be mapped or drawn onto only 3D objects. Absent a specific disclaimer limiting texturing, drawing, or mapping to 3D objects, the Court would err by importing such a requirement to the claims.

Third, Apple's expert fails to offer compelling extrinsic evidence to support Apple's construction while SpaceTime's expert explains exactly why SpaceTime's construction comports with the contemporary literature and his own understanding as a skilled artisan.

Dr. Wolfe, the Apple expert, relies upon a single reference—the Microsoft Computer Dictionary to support Apple's proposed construction.[1] Dkt. 38 at 10. Dr. Wolfe asserts that because the reference states that texture mapping involves wrapping a texture around an object, that means that the object must be 3D. But the definition itself merely notes that the picture or pattern "can be" wrapped around an object; it does not proceed to state that the object that is being wrapped must be a 3D object. Dkt. 38-7. A picture or pattern could just as easily be applied to a 2D surface—indeed, a flat surface can be textured just as well. Dr. Schaefer confirms that a skilled

[1] Apple also notes that Dr. Wolfe "has never heard of 'texturing' as referring to drawing or mapping an image onto a 2D figure." Dkt. 38 at 11. Given the references that SpaceTime's expert Dr. Schaefer notes from as far back as 1993, Ex. 6 ¶¶ 25-32, Dr. Wolfe's ignorance on this topic only works to undermine his own credibility.

artisan would understand the application of a picture or pattern to a 2D surface to constitute texturing or texture mapping. Ex. 6 ¶ 23.

In contrast, Dr. Schaefer explains why three separate publications—including one he authored himself—demonstrate that texturing can be applied to 2D objects. *Id.* ¶¶ 25-32. A 1993 paper by Paul Haeberli, for example, unequivocally provides that texture mapping is not limited to 3D objects. The paper demonstrates how to use texture mapping to create smoothly drawn lines by mapping textures on 2D polygons where the width of the line is controlled by the width of the 2D polygon (Ex. 1 at 2-3):

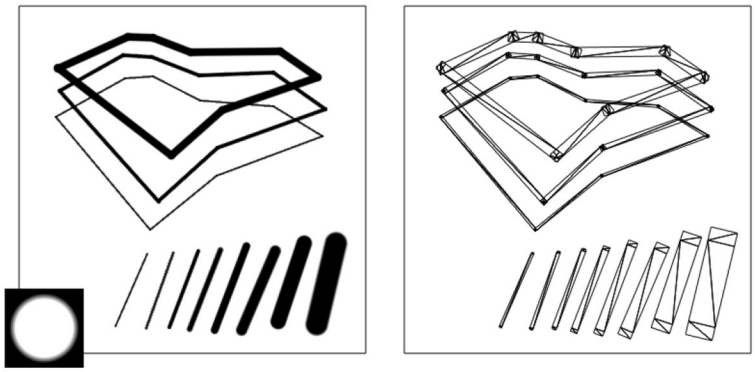


Figure 1. Anti-aliased line segments.

The other papers relied upon by Dr. Schaefer further demonstrate the use of texture mapping onto 2D objects. Igarashi's paper is about computing deformations of a 2D image to another 2D image by triangulating the shape and using texture mapping to apply the image to a deformed 2D shape (Ex. 2 at 2):

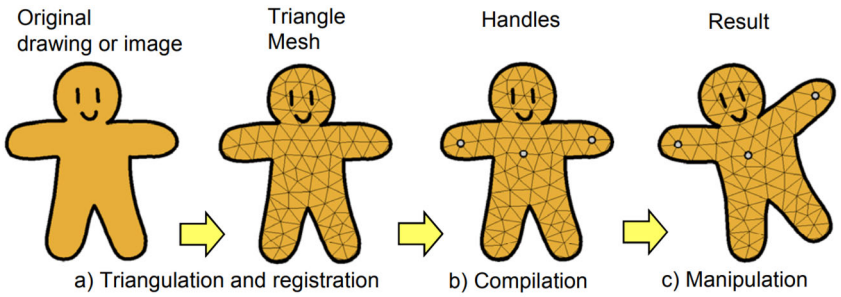
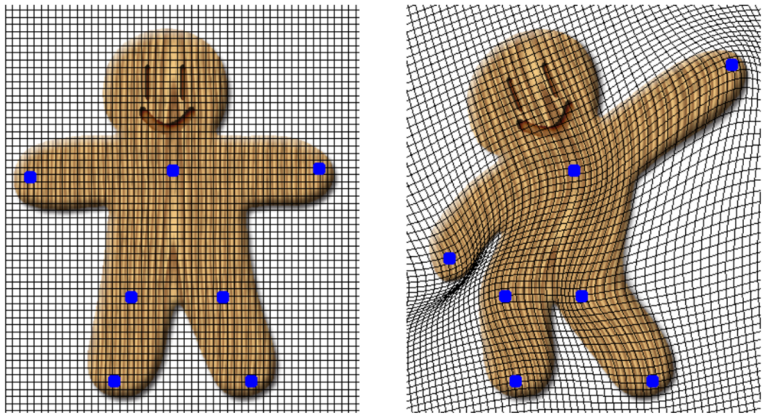


Figure 2: Overview of the system. The system first triangulates the original shape, and performs some pre-computation. The user adds handles. Moving the handles results in a fast deformation.

The Schaefer paper demonstrates the use of texturing to map 2D images onto a 2D space to perform image deformation. For example, in Figure 7 each image in the tiny squares on the left is textured (mapped) onto the corresponding square on the right to create a deformed image (Ex. 3 at 6):



These multiple contemporaneous academic papers demonstrate that texturing can be applied to 2D objects.

In short, the intrinsic and extrinsic evidence both support SpaceTime's proposed construction, and the Court should not import an additional limitation from specific embodiments to restrict texturing to 3D objects in the claims.

B. The '868 preambles do not provide antecedent bases or give life to the claims.

The preambles of Claims 1, 10, and 19 of the '868 Patent are not limiting. The general presumption is that "the preamble does not limit the claims." *Allen Eng'g Corp. v. Bartell Indus.,*

Inc., 299 F.3d 1336, 1346 (Fed. Cir. 2002). More specifically, "[a] preamble is not a claim limitation if the claim body 'defines a structurally complete invention . . . and uses the preamble only to state a purpose or intended use for the invention.'" *Georgetown Rail Equip. Co. v. Holland L.P.*, 867 F.3d 1229, 1236 (Fed. Cir. 2017) (quoting *Rowe v. Dror*, 112 F.3d 473, 478 (Fed. Cir. 1997)). "[P]reamble language merely extolling benefits or features of the claimed invention does not limit the claim scope without clear reliance on those benefits or features as patentably significant." *Id.* (quoting *Catalina Mktg.*, 289 F.3d at 809); *accord Acceleration Bay, LLC v. Activision Blizzard Inc.*, 908 F.3d 765, 771 (Fed. Cir. 2018) (finding claim terms that appear in preamble not limiting where "[t]hey do not impart any structure into or serve as antecedents for the claims at issue" and where they instead "simply provide an intended use for what [is claimed]").

Each of the preambles is not limiting because it simply provides an intended use and describes the features of the claimed invention:

- Claim 1: "A method for using a two-dimensional (2D) space to selectively interact with a plurality of applications open on a device and a three-dimensional (3D) immersive space to switch between said plurality of application, said device having a fixed resolution display, comprising:" Ex. 5 at 38:40-44.

- Claim 10: "A system for using a two-dimensional (2D) space to selectively interact with at least one of a plurality of applications open on a computing device and a three-dimensional (3D) space to switch between said plurality of application, comprising:" Ex. 5 at 40:40-44.

- Claim 19: "A method for using a two-dimensional (2D) space to selectively interact with at least one of a plurality of applications open on a device and a three-dimensional (3D) space to switch between said plurality of application, comprising:" Ex. 5 at 42:52-55.

The preambles are not limiting because the bodies of the claims themselves describe structurally complete inventions. The body of Claim 1 teaches the method of receiving inputs from a user, opening applications in response to those inputs, allowing a user to switch between those applications, replacing objects corresponding with those applications in 2D space with images of

those applications in 3D space, and allowing a user to interact with the applications by replacing the images within 3D space with one of the applications in 2D space based on user selection. *See* Ex. 5 at 38:45-39:50; *see also id.* at 42:56-44:24 (same for the body of Claim 19). Likewise, the body of Claim 10 describes a closed "system" comprised of "a display device," "at least one input device," "at least one processor operatively coupled to said displayed device and said at least one input device," and a "memory device comprising executable code" to carry out the method of receiving inputs from a user, opening applications in response to those inputs, allowing a user to switch between those applications, replacing objects corresponding with those applications in 2D space with images of those applications in 3D space, and allowing a user to interact with the applications by replacing the images within 3D space with one of the applications in 2D space based on user selection. *Id.* at 40:45-41:57. The preambles thus merely state a "purpose or intended use for the invention" and leave the bodies of these claims to "define[] a structurally complete invention" without the preambles. *Catalina Mkt'g Int'l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002) (quoting *Rowe*, 112 F.3d at 478).[2]

Nonetheless, Apple argues that the preambles at issue provide antecedent bases and that they are necessary to give life to the claims. Dkt. 38 at 12-16. Apple is incorrect.

First, even if the preambles provide antecedent bases, "antecedent basis alone is not determinative of whether a preamble is limiting." *Shoes by Firebug LLC v. Stride Rite Children's*

[2] Apple does not argue that the prosecution history of the '868 Patent demonstrates that the patentee "relied upon the preamble during prosecution to distinguish the invention from the prior art." *See Georgetown*, 867 F.3d at 1238; *Am. Med. Sys., Inc. v. Biolitec, Inc.*, 618 F.3d 1354, 1359 (Fed. Cir. 2010) (holding that one reason the preamble was not limiting where was because there was "no suggestion in the prosecution history" that the inventors added the relevant phrase "to distinguish their invention from the prior art"). Absent any such evidence that the patentee advantageously used the preamble to traverse a rejection (which SpaceTime did not), the Court has one more reason to find that the preambles at issue are not limiting.

Grp., LLC, 962 F.3d 1362, 1368 (Fed. Cir. 2020); *see also Eaton Corp. v. Rockwell Intern. Corp.*, 323 F.3d 1332, 1339 (Fed. Cir. 2003) ("When limitations in the body of the claim rely upon and derive antecedent basis from the preamble, then the preamble ***may*** act as a necessary component of the claimed invention.") (emphasis added). Indeed, a mere reference in the claim to a term used in the preamble "alone does not require that the preamble be read as limiting." *Fujifilm Corp. v. Motorola Mobility LLC*, No. 12-cv-03587-WHO, 2015 WL 757575, at *16 (N.D. Cal. Feb. 20, 2015). The context and remainder of the claim language matter.

Second, the preambles actually are not antecedents. Notably, Apple fails even to explain *how* the preamble phrases constitute antecedents. It offers a color-coded reproduction of the claims and a chart, but no argument or even explanation of the relationship between the preamble phrases and their repetition in the claim body. At most, Apple seems to suggest that because the claim language uses the word "said" before a claim term also found in the preamble, that alone establishes that the preamble serves as an antecedent. But that is not the law. *See Fujifilm*, 2015 WL 757575, at *16. The Federal Circuit has enumerated two situations where a preamble is limiting on an antecedent basis: where the preamble "recites essential structure or steps" or if it is "necessary to give life, meaning, and vitality" to the claims. *TomTom, Inc. v. Adolph*, 790 F.3d 1315, 1323 (Fed. Cir. 2015). Or, as this Court has phrased the inquiry, if the preamble does not "illuminate[] the meaning of terms within the body of the claims or the context essential for understanding their meaning" it does not provide a necessary antecedent basis. *Visible Connections, LLC v. Zoho Corp.*, 418 F. Supp. 3d 155, 161 (W.D. Tex. 2019).

Apple makes no argument that the preamble recites essential structure or steps. It baldly asserts that the preamble gives life, but the only support it proffers is that the preambles set forth the concept of allowing a user to interact with multiple windows or applications in a 3D space—a

concept also found in the specification. Dkt. 38 at 15. But simply because a concept is also recited in the specification does not make the preambles which repeat the concept limiting. That is particularly true here, where ***the remaining claim language*** enumerates all of the essential components of the invention and does not rely on the preamble to provide life, meaning, or vitality. Stated differently, even without their preambles, the '868 patent's independent claims "describe[] a structurally complete invention such that deletion of the preamble phrase does not affect the structure or steps of the claimed invention." *Catalina*, 289 F.3d at 809. Claim 1, for example, would read as follows without the preamble:

> [R]eceiving a plurality of inputs from a user, said plurality of inputs comprising at least first, second, and third inputs; opening ***[a] plurality of applications*** in response to said plurality of inputs, said plurality of applications comprising at least first, second, and third applications, wherein for each one of said plurality of applications (i) an object is generated having application-specific data, (ii) said object is displayed in ***[a] 2D space on [a] fixed resolution display***, and (iii) said user is allowed to modify at least a portion of said application-specific data by interacting with said object; . . . replacing all objects corresponding to said plurality of applications that are visible in said 2D space with said plurality of images, said plurality of images being displayed in ***[a] 3D immersive space*** . . . .

Ex. 5, at 38:45-39:6 (emphases added). The terms repeated in the preamble of claim 1 ("2D space," "selectively interact," "3D immersive space," and "fixed resolution display") neither add to nor further define the scope of the claim, and thus do not create additional limitations. *Am. Med. Sys.*, 618 F.3d at 1359 (holding that where "generic term" did not provide any context essential to understanding the meaning of the phrase in the body of the claim the preamble was not limiting); *see also Fujifilm*, 2015 WL 757575, at *16 (finding preamble not limiting even after recognizing that "the reference to 'the image data' in the first element of claim 1 does support the notion that the preamble serves as an antecedent to 'image data' as used in the claim").

Where the preamble "merely gives a descriptive name to the set of limitations in the body of the claim that completely set forth the invention," the preamble is not limiting. *IMS Tech., Inc.*

v. Haas Automation, Inc., 206 F.3d 1422, 1434 (Fed. Cir. 2000). The "2D space," "plurality of applications," "3d immersive space," and "fixed resolution display" phrases that Apple focuses on in the preamble are merely descriptive names of the limitations that are subsequently and completely described in the body of the claim. As such, these descriptive names add nothing to the claim and the claim is not and cannot be limited by their mere appearance in the preambles. As Apple has pointed to nothing in the patent, the claim language, or prosecution history that overcomes the general rule that preambles are not limiting, the Court should decline to find that they are limiting.

III. CONCLUSION

SpaceTime respectfully requests that Court adopt its proposed constructions.

Dated: September 22, 2022

Respectfully submitted,

/s/ Max L. Tribble, Jr.

Max L. Tribble, Jr. – Lead Counsel
Texas State Bar No. 20213950
Meng Xi
California State Bar No. 280099
Adam Tisdall
Texas State Bar No. 24106885
mtribble@susmangodfrey.com
mxi@susmangodfrey.com
SUSMAN GODFREY, L.L.P.
1000 Louisiana Street, Suite 5100
Houston, Texas 77002
Telephone: (713) 651-9366
Facsimile: (713) 654-6666

Matthew R. Berry
Washington State Bar No. 37364
SUSMAN GODFREY, L.L.P.
401 Union Street, Suite 3000
Seattle, Washington 98101
Telephone: (206) 516-3880

Facsimile: (206) 516-3883
mberry@susmangodfrey.com

Y. Gloria Park
New York Bar No. 5477047
SUSMAN GODFREY, L.L.P.
1301 Ave. of the Americas, 32nd Fl.
New York, New York 10019-6023
Telephone: (212) 336-8330
Facsimile: (212) 336-8340
gpark@susmangodfrey.com

S. Calvin Capshaw
State Bar No. 03783900
Elizabeth L. DeRieux
State Bar No. 05770585
CAPSHAW DERIEUX, LLP
114 E. Commerce Ave.
Gladewater, TX 75647
Telephone: 903-845-5770
ccapshaw@capshawlaw.com
ederieux@capshawlaw.com

Attorneys for Plaintiff SpaceTime3D, Inc.

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on this 22nd day of September, 2022, the foregoing was served by ECF to the following:

J. Stephen Ravel
Texas State Bar No. 16584975
KELLY HART & HALLMAN LLP
303 Colorado, Suite 2000
Austin, Texas 78701
Tel: (512) 495-6429
steve.ravel@kellyhart.com

Brian Rosenthal (pro hac vice)
Katherine Q. Dominguez (pro hac vice)
Allen Kathir (pro hac vice)
GIBSON, DUNN & CRUTCHER LLP
200 Park Avenue
New York, New York 10166

Ryan K. Iwahashi (pro hac vice)
GIBSON, DUNN & CRUTCHER LLP
1881 Page Mill Road
Palo Alto, CA 94304-1211
Tel: (650) 849-5300
Fax: (650) 849-5067
riwahashi@gibsondunn.com

Wendy W. Cai (pro hac vice)
GIBSON, DUNN & CRUTCHER LLP
1050 Connecticut Avenue, N.W.
Washington, DC 20036-5306
Tel: (202) 955-8295
Fax: (202) 831-6106

Tel: (212) 351-4000
Fax: (212) 716-0839
brosenthal@gibsondunn.com
kdominguez@gibsondunn.com
akathir@gibsondunn.com

Neema Jalali (pro hac vice)
GIBSON, DUNN & CRUTCHER LLP
555 Mission Street, Suite 3000
San Francisco, CA 94105-0921
Tel: (415) 393-8200
Fax: (415) 374-8409
njalali@gibsondunn.com

wcai@gibsondunn.com

Attorneys for Defendant Apple Inc.

/s/ Adam Tisdall
Adam Tisdall